

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
Larry G. Fischer, et al.

Group Art Unit: Not Assigned

Examiner: Not Assigned

Patent No.: 5,852,651  
Issued: December 22, 1998  
For: CELLULAR COMMUNICATIONS  
SYSTEM WITH SECTORIZATION

PRELIMINARY AMENDMENT

Commissioner for Patents  
BOX REISSUE  
Washington, DC 20231

Dear Sir:

Prior to initial review, please amend the above-identified reissue application as follows:

IN THE CLAIMS

Please add the following new claims.

10. A method of transmitting an RF signal between a base station and at least one remote unit, the method comprising:  
generating a digitized representation of the RF signal at the base station, wherein the RF signal is a combined analog signal representing a plurality of outbound wireless transmissions for a set of channels; and  
transmitting the digitized representation to the remote unit.
11. The method of claim 10, wherein transmitting the digitized representation to a remote unit comprises transmitting the digitized representation to a remote antenna unit.

12. The method of claim 10, wherein generating a digitized representation of the RF signal comprises:

sampling the RF signal to produce a stream of digital samples; and  
framing the digital samples to produce a stream of frames.

13. The method of claim 10, wherein transmitting the digitized representation to the remote unit comprises transmitting the digitized representation over a path selected from the group consisting of a fiber optic cable and a coaxial cable.

14. A method of transmitting wireless transmissions between a base station and a remote unit, the method comprising:

generating a set of RF analog modulated channel carriers representing outbound transmissions, wherein each RF analog modulated channel carrier corresponds, in a one-to-one relationship, to a channel in a set of channels used by the remote unit;

combining the set of RF analog modulated channel carriers into a combined RF signal;

generating a digitized representation of the combined RF signal at the base station;

and

transmitting the digitized representation to the remote unit.

15. The method of claim 14, wherein transmitting the digitized representation to a remote unit comprises transmitting the digitized representation to a remote antenna unit.

16. The method of claim 14, wherein generating a digitized representation of the RF signal comprises:

sampling the RF signal to produce a stream of digital samples; and  
framing the digital samples to produce a stream of frames.

17. The method of claim 14, wherein transmitting the digitized representation to the remote unit comprises transmitting the digitized representation over a path selected from the group consisting of a fiber optic cable and a coaxial cable.

18. A method of transmitting RF signals between a base station and a remote unit, the method comprising:

receiving a plurality of outbound RF signals from a network, wherein the plurality of outbound RF signals correspond to a set of channels used by the remote unit;

generating an RF analog outbound channel carrier for each channel in the set of channels used by the remote unit;

analog modulating each of the plurality of outbound RF signals onto a corresponding one of the RF analog outbound channel carriers, thereby generating a plurality of RF analog modulated channel carriers;

combining the plurality of RF analog modulated channel carriers into a combined RF signal;

generating a digitized representation of the combined RF signal at the base station;

and

transmitting the digitized representation to the remote unit.

19. A method of transmitting RF signals between a remote unit and a base station, the method comprising:

receiving a plurality of inbound RF signals from a plurality of mobile units at the remote unit;

combining the inbound RF signals into a combined RF signal;

generating a digitized representation of the combined RF signal at the remote unit;

and

transmitting the digitized representation to the base station.

20. A method of transmitting RF signals between a remote unit and a base station, the method comprising:

receiving simultaneous inbound RF signals from a plurality of mobile units at the remote unit;

combining the inbound RF signals into a combined RF signal representing the inbound RF signals in a set of channels used by the remote unit;

digitizing the combined RF signal; and

transmitting the digitized combined RF signal to the base station.

21. A method of transmitting cellular telephone transmissions between a base station and a mobile unit, the method comprising:

generating a digitized representation of a first RF signal at the base station, wherein the first RF signal is a combined analog signal representing all outbound cellular telephone transmissions for a set of channels used by a cell remote from the base station;

transmitting the digitized representation to the cell;

generating a second RF signal from the digitized representation of the first RF signal at the cell; and

broadcasting the second RF signal to the mobile unit.

22. A method of transmitting RF signals between a base station and a plurality of mobile units, the method comprising:

generating a set of RF analog modulated channel carriers representing outbound RF signals, wherein each RF analog modulated channel carrier corresponds, in a one-to-one relationship, to a channel in a set of channels used by a remote unit;

combining the set of RF analog modulated channel carriers into a first combined RF signal, wherein the first combined RF signal represents outbound RF signals;

generating a digitized representation of the first combined RF signal at the base station;

transmitting the digitized representation to the remote unit;

generating a second RF signal from the digitized representation of the first RF signal at the remote unit; and

broadcasting the second RF signal to the plurality of mobile units.

23. A method of transmitting RF signals between a base station and a plurality of mobile units, the method comprising:

receiving a plurality of outbound RF signals from a network, wherein the plurality of outbound RF signals correspond to a set of channels used by a remote unit;

generating an RF analog outbound channel carrier for each channel in the set of channels used by the remote unit;

analog modulating each of the plurality of outbound RF signals onto a corresponding one of the RF analog outbound channel carriers, thereby generating a plurality of RF analog modulated channel carriers;

combining the plurality of RF analog modulated channel carriers into a first combined RF signal;

generating a digitized representation of the first combined RF signal at the base station;

transmitting the digitized representation to the remote unit;

generating a second combined RF signal from the digitized representation of the first combined RF signal at the remote unit; and

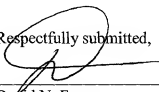
broadcasting the second combined RF signal from the remote unit to the plurality of mobile units.

### CONCLUSION

Applicant believes that the claims are in condition for allowance. Reconsideration and allowance of the claims is respectfully requested. If the Examiner has any questions or concerns regarding this application, please contact the undersigned at the number listed below.

Date: December 22, 2000

Respectfully submitted,

  
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